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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,456

12/12/2003

Tatsumi Fujioka

118076

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25944 7590 02/22/2007  
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EXAMINER

PRESTON, ERIK D

ART UNIT

PAPER NUMBER

2834

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/733,456	FUJIOKA, TATSUMI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Erik D. Preston	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,8,11,15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,8,11,15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/26/2007</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1,6,8 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iio (US 4886392, supplied by applicant) in view of Weinstein (US 4943178).

With respect to claim 1, Iio teaches a press-fitting method for press-fitting an inserting member (Fig. 4, #5) into a receiving member (Fig. 4, #8), comprising: Forming an engaging hole (Fig. 4, #15) in the receiving member, forming at least one groove (Fig. 4, #16) in an inner periphery of the receiving member, the inner periphery created by the engaging hole; and press-fitting the inserting member in the engaging hole while releasing an excess into the groove (Col. 4, Lines 45-62), wherein the groove forming step forms a plurality of grooves in a direction that the engaging hole is formed (circumferentially), but it does not teach that the grooves are slanted in a circumferential direction.

However, Weinstein teaches a fitting method comprising: a plurality of grooves (Fig. 4, #58a) formed in a direction that an engaging hole (Fig. 4, #32a) is formed (circumferentially), wherein the grooves are slanted in a circumferential direction.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the grooves of Iio in view of the slanted grooves as taught by Weinstein because they provide a well-known equivalent manner of forming a plurality of grooves in an engaging hole (Weinstein, Col. 4, Lines 26-38).

With respect to claim 6, lio in view of Weinstein teaches the method of claim 1, and Weinstein teaches that the grooves are arranged apart from each other in the circumferential direction (as seen in Fig. 4).

With respect to claim 8, lio in view of Weinstein teaches the method of claim 1, and lio teaches that the groove forming step forms a plurality of grooves so that a root diameter of the receiving member at a bottom of each groove is substantially equal to an outer diameter of the inserting member (as seen in Figs. 4 & 5).

With respect to claim 16, lio in view of Weinstein teaches the method of claim 1, and lio teaches that the grooves are formed at a position adjacent to a side from which the inserting member is inserted (as seen in Fig. 4).

Claims 2 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarkar et al. (US 2004/0066102, previously cited) in view of lio (US 4886392, supplied by applicant) in view of Weinstein (US 4943178). Sarkar teaches forming an engaging hole in a receiving member, an inserting member that is a base of a rectifying element included in an alternate current power generator and used as an electrode being press-fitted (Paragraph 4) into the engaging hole; and a copper (Paragraph 27) receiving member that is a radiation plate of the rectifying element (Paragraphs 1-4), wherein the engaging hole is formed by punching (Paragraph 27), but it does not teach (1) forming at least one groove in an inner periphery of the receiving member, the inner periphery created by the engaging hole and press-fitting the inserting member in the engaging

hole while releasing an excess into the groove, wherein the groove forming step forms a plurality of grooves in a direction that the engaging hole is formed (circumferentially), (2) the grooves being slanted in a circumferential direction, (3) the inserting member having a higher hardness than the receiving member, or (4) that the inserting member is made of copper.

However, lio teaches: (1) forming at least one groove (Fig. 4, #16) in an inner periphery of a receiving member, the inner periphery created by an engaging hole; and press-fitting an inserting member in the engaging hole while releasing an excess into the groove (Col. 4, Lines 45-62) & (2) wherein the inserting member has a higher hardness than the receiving member; Weinstein teaches (3) a fitting method comprising: a plurality of grooves (Fig. 4, #58a) formed in a direction that an engaging hole (Fig. 4, #32a) is formed (circumferentially), wherein the grooves are slanted in a circumferential direction; and (4) copper rectifiers were extremely well known at the time of the invention.

It would have been obvious to one of ordinary skill in the art at the time of the invention to: install the rectifiers of Sarkar in view of the method as taught by lio because it provides a press-fitting method that avoids cracking (lio, Col. 2, Lines 6-19); modify the grooves of Sarkar and lio in view of the slanted grooves as taught by Weinstein because they provide a well-known equivalent manner of forming a plurality of grooves in an engaging hole (Weinstein, Col. 4, Lines 26-38); and to use copper rectifiers because it has been held that one of ordinary skill in the art at the time the invention would choose a suitable and desirable material, because it would be within the

general skill of a worker in the art to select a material on the basis of its suitability for the intended use as a matter of obvious design choice (In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960)).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mansel (US 4118134) in view of Iio (US 4886392, supplied by applicant). Mansel teaches a press-fitting method for press-fitting an inserting member in a receiving member, comprising: punching an engaging hole in the receiving member (as seen in Fig. 4) while forming a sheared surface and a fractured surface on an inner periphery of the receiving member (as seen in Fig. 3), the inner periphery created by the engaging hole; and press fitting the inserting member in the receiving member by inserting the inserting member from an end of the receiving member adjacent to the sheared surface, but it does not teach forming at least one groove in the inner periphery.

However, Iio teaches forming at least one groove (Fig. 4, #16) in the inner periphery of the engaging hole of a receiving member (Fig. 4, #8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the engaging hole of Mansel in view of the grooves as taught by Iio because aid in providing a press-fitting method that avoids cracking (Iio, Col. 2, Lines 6-19).

### ***Response to Arguments***

Applicant's arguments, see remarks, filed 11/27/2006, with respect to the rejection(s) of claim(s) 1,2,6,8,11,15 & 16 under 102/103 have been fully considered

and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Weinstein and Mansel (as detailed above).

### **Conclusion**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is (571)272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



02/08/2007

  
ERIK D. PRESTON  
PRIMARY EXAMINER